

to clinical studies both on disease states involving deficiencies of one or more of the urea cycle enzymes and also on the use of urea and related compounds such as cyanate and carbamyl-phosphate. If the discussions reproduced in this book are any guide, it is also a lively 'family' although not wholly a united one; there are several junctures at which one is led to wonder whether the contestants came to blows (either real or metaphorical) after the exchanges which are recorded! Or possibly the printed word exaggerates the reality.

As with the published proceedings of many symposia it is somewhat hard to assess the likely range of appeal of this book. It will undoubtedly be a useful source for those working in, or wishing to review, this area of metabolism. The net is in fact spread somewhat wider than the urea cycle itself and includes as one might expect considerable discussion of ammonia metabolism as for example in articles on glutamate dehydrogenases and their control and on liver ammonia levels and hepatic coma. Glutamine metabolism is also considered but it is perhaps a curious omission that direct consideration of the properties of glutamine synthetase and glutaminase are omitted. The discussions include another airing of the Krebs/Chappell dialogue regarding the equilibrium status of glutamate dehydrogenase in the liver but

without resolution of this seeming paradox. Is it too much to hope that some measure of agreement can be reached on this issue in the near future? Some less obviously related inclusions such as for example that on hepatic histidine metabolism are explicable on the basis of their relationship to the current work of Sir Hans Krebs' colleagues rather than on their relevance to the mainstream of the symposium. This is in concert with the construction of the symposium and its published proceedings as a tribute to Sir Hans by illustrating the breadth and depth of the work which has been inspired by his first cyclic proposal. In this respect the symposium was clearly most successful and in it also lies, I feel, the chief value of this book. Being now in possession of so much knowledge, which grows at an ever increasing rate, there is a tendency to lose sight of the historical roots of the subject and in particular to fail to impart a sense of this history to students. Since many of those responsible for making this history are still alive and active in biochemical research it is important that we do take the opportunity to obtain this history at first hand. One hopes that such material will be available more widely and this book represents a contribution to this end.

M. C. Scrutton

Peptides: Chemistry, Structure and Biology

Proceedings of the Fourth American Peptide Symposium

Edited by R. Walter and J. Meienhofer

Ann Arbor Science Publishers; Ann Arbor, 1975

xvii + 1053 pages. £20.50, \$37.95

This volume contains the papers presented at the Fourth American Peptide Symposium, held in New York in June 1975. Being one-third larger than the account of the previous American Symposium would indicate that interest in peptides has not declined during the intervening three years. It is perhaps unfortunate that virtually no discussion material has been included. Admittedly it is often the case

that impromptu questions and comments after a paper are not always the best thought out but frequently a point of general interest will emerge. To benefit from this aspect of a meeting and from discussion generated by but outside the formal programme is the good fortune of the participants. The rest of us must glean what we can from the book. This book however enables us to do more than glean

and although the quality of work described varies, as is inevitable with conferences, a wealth of useful information is contained.

Main sections deal with conformation, synthesis, biologically-active peptides and neurohypophyseal hormones and there are smaller groups of papers on brain-specific and hypothalamic peptides, analytical and isolation procedures and a miscellaneous section on antibiotics, inhibitors and toxins. These section titles underline the wide-ranging character of peptides as a subject. Studying the contents leads the reader to conclude that in many cases a multidisciplinary approach needs to be followed in order to achieve the most expeditious solution to a problem within the field. The main section, on conformational studies, reveals this to be an area of developing interest as electronic hardware becomes more available. The relevance of some of this ingenious work is surely questionable and one wonders how far the incorporation of other groups, such as a spin label, may alter the conformation particularly of a small peptide. Other unrelated techniques may hopefully confirm

results obtained by these methods or serendipity may intervene. Many of the papers which contain synthetic work reveal a welcome trend in the direction for which Dr Meienhofer appealed at the previous Symposium, i.e., a more critical attitude by authors towards their methods and products. Efforts to define and circumvent some of the side reactions occurring during synthesis make an important contribution to the art. For example in the case of liquid hydrogen fluoride treatment such work may set the value of this reagent into a clearer perspective and will hopefully prevent its introduction becoming the greatest non-advance of recent years. Let us hope that the next Symposium will contain more papers of this type.

A tribute is included to Lyman C. Craig who in the course of his work introduced the countercurrent distribution machine and the rotary film evaporator to practical chemists. The book is well produced in the usual readable style and is recommended to all groups interested in the making and actions of peptides.

R. Wade

Control of Enzyme Activity (Outline Studies in Biology Series)

by P. Cohen

Chapman and Hall; London, 1976

63 pages. £1.30

The monograph by Dr Cohen is one of a number of recent additions to the Outline Studies in Biology series which aims to assist students in making the transition in their studies from standard texts to scholarly reviews and original papers. Its scope is restricted to a discussion of mechanisms which regulate the extent of expression of the catalytic activity of an enzyme and hence mechanisms which control the amount of enzyme in a system by modulation of the rates of synthesis or degradation are not examined. The question of the evaluation of the *in vivo* relevance of the effects described is also not taken up here since this aspect is considered in a comparison volume of the series ('Metabolic Regulation' by R. M. Denton

and C. I. Pogson). The monographs by Cohen and by Denton and Pogson in fact complement each other very nicely and together provide an excellent and up-to-date view of the subject at a level which should be readily comprehensible to the more advanced undergraduate. Indeed I have already started to use both monographs as required reading for a 2nd year's Honours Biochemistry course on metabolism.

My main reservation in respect to Dr Cohen's monograph is that it is perhaps somewhat unbalanced, although the view which it provides of the topic is extremely interesting. About 25% of the monograph is devoted to discussion of the modulation of enzymic activity by allosteric effectors and the principles of